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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,576	02/02/2001	Russell Allen Monk	31456/204621	7932

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EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 07/02/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-4

Office Action Summary

Application No.

09/776,576

Applicant(s)

MONK ET AL.

Examiner

Hai Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, drawn to a composite structural member, classified in class 428, subclass 314.4.
 - II. Claims 14 and 15, drawn to a method of making a composite structural member, classified in class 264 subclass various.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process such as an injection molding.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Paul F. Pedigo on 05/28/02 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-13. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14 and 15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynn et al (US 6,093,481) in view of Day (US 5,589,243). Lynn discloses an insulation board comprising an extruded, closed-cell foam core **13** faced on both sides with two facing sheets **11, 12** and the attachment is facilitated by thermoplastic or thermosetting adhesive (figure 1, and column 4, lines 9-14). Lynn discloses a rigid foam core made of polypropylene (column 5, line 58). Lynn is silent as to the uneven surface of the core. Day rectifies the missing feature. Day teaches a reinforced foam core **395** having a foam core panel **385** sandwiched between the two skin layers **394** wherein the core panel having grooves or recesses **386** on its upper and lower surfaces (figures 34 and 35, column 16, lines 36-56). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the grooves or recesses on both surfaces of the core in Lynn motivated by the desire to fill the resin within the recesses to form fillets which positively connect the core to the skins. With regard to claim 2, Lynn discloses the skin layer can be made of reinforced plastic (column 3, lines 46-55).

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With regard to claim 3, since the core of Lynn as modified of Day is cut through its thickness from the lateral surface to form grooves or recesses, meeting the structural limitations required by the claims, it is the examiner's position that the hinge is inherently generated at the opposite lateral surface about which the core is bent.

With regard to claim 6, Lynn teaches the core having a thickness of 1 inch (column 9, line 65).

With regard to claim 7, Lynn teaches each skin having a thickness of 0.3 to 3 mils (0.012 to 0.12 inch) (column 5, line 37). The prior art thickness range is completely within the claimed thickness range. However, such as variable would have been recognized by one skilled in the art to employ as little of the thickness of the skin as possible in order to reduce cost of the material and shipping. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the skin layer of Lynn with the thickness instantly claimed since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involved only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to claims 8 and 9, Table II-continuous of Lynn shows that the shear strength that is analogous to the flexible strength of the insulation board meeting the specific range required by the claim. Lynn teaches the foam core having the density ranging from 0.5 to 10 pcf (column 5, line 63). Applicant's density range is completely within the prior art density range. However, such as variable would

have been recognized by one skilled in the art as dependent upon the of the intended use of the product, such that higher density can be used depending upon ultimate strength required and with higher density frequently being used with thinner cross-section parts. As such, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the skin layer of Lynn with the thickness instantly claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to claim 10, Lynn is silent as to a marine craft. However, the recitation that the article is a "a marine craft" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

With regard to claims 4 and 15, Lynn is silent as to the skin layer formed from fiber-reinforced plastics. Day teaches the composite structural member having a rigid foam board **35** laminated to a pair of skins **68** which is fiber reinforced plastic (figure 25 and column 8, lines 51-55). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the fiber reinforced plastic as the skin layer of the insulation board in Lynn

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motivated by the desire to increase the strength and structural stability of the board.

7. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Day (US 5,589,243) in view of Hansen (US 5,870,965). Day teaches the composite structural member for use as the boat hull having an extruded, rigid, skived foam core **58** laminated to a pair of skins **68** by an adhesive layer **72**. Day also teaches the adhesive filling the recesses to form fillets and provides a stronger bond between the foam core and the skin layer (figure 25, column 8, lines 51-55, and column 7, lines 33-35). Day does not teach the foam core made of polypropylene homopolymer. Hansen discloses a high performance boat comprising a foam stabilizing member made from a closed cell polypropylene that is coated with a plastic protective material (abstract and column 6, lines 1-7). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the closed cell polypropylene foam being a foam core of Day motivated by the desire to provide a buoyant foam core that does not absorb water and withstands the harsh environment encountered by a high speed watercraft including normal docking and moorage bumping.

With regard to claims 2, 4 and 13, Day teaches the skin being a fiber-reinforced plastic (column 8, line 54 and column 7, lines 27-28).

With regard to claim 3, since the foam core of Day as modified of Hansen is cut through its thickness from the lateral surface to form grooves or recesses, meeting the structural limitations required by the claims, it is the examiner's

position that the hinge is inherently generated at the opposite lateral surface about which the core is bent.

With regard to claims 5 and 12, Day teaches the adhesive being polyurethane or polyester (column 7, lines 27-28).

With regard to claims 6 and 7, Day is silent as to the thickness ranges of the foam core and the skin layer. However, such a variable would have been recognized by one skilled in the art as dependent upon the intended use of the product, such that the thicker the core, the more important shear deflection becomes, to the point of exceeding deflection due to bending; or the strength and stiffness of the composite can be structurally improved by increasing the thickness of the skin. As such, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the foam core and the skin having the thickness within the range as claimed since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to claims 8 and 9, Day teaches the foam core having the density ranging from 2 to 16 pcf (column 2, line 37). Applicant's density range is completely within the prior art density range. See obviousness rational with respect to claims 8 and 9 in paragraph no. 6 above. Since the density of the core dictates the shear strength of the composite and the density of the core in Day encompasses the specific range of density as required by the claims, it is the

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examiner's position that the shear strength of the composite would inherently be present within the range instantly claimed.

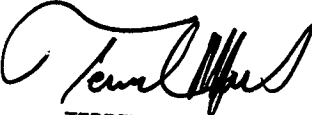
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00 (EAST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Hai Vo
June 19, 2002


TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700